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Effects of extracts of orange fleshed sweet potato on carbohydrate metabolising enzymes

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The inhibition of carbohydrate metabolizing enzymes is an important strategy adopted in the management of type 2 diabetes to achieve reduction of postprandial hyperglycemia. Edible plants rich in phenolic compounds have been reported to act as good inhibitors of carbohydrate digestive enzymes. This study assessed the inhibitory potential of the extracts of tubers (OSPT) (1, 2, 3, 4 and 5) mg/ml and leaves (OSPL) (10, 20, 30, 40 and 50)mg/ml of orange fleshed sweet potato on α-glucosidase, α- amylase, sucrase and maltase using acarbose (0.625, 1.25, 2.5, 5, 10) mg/ml as standard. Both extracts show significantly lesser inhibition and higher IC50 values of the activities of all the enzymes compared to acarbose at ($P<0.05$). OSPT had the highest IC50 values of (35.03 ± 1.86, 38.38 ± 2.34, 51.54 ± 2.76 and 70.93 ± 1.98) mg/ml for α- glucosidase, α- amylase, sucrase and maltase respectively. However, OSPL showed an appreciable inhibition of all the enzymes and a significantly lower IC50 of (5.31 ± 0.92, 5.4 ± 1.82, 4.14 ± 2.86, and 5.46 ± 3.01) mg/ml for alpha glucosidase, alpha amylase, sucrase and maltase respectively at ($P<0.05$). The findings from this study indicate the potential of the leaves of orange fleshed sweet potato in the management of hyperglycemia through its inhibitory effects on carbohydrate metabolizing enzymes.

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